

CLEAN VERSION OF THE AMENDED CLAIMS

15. (new) A method for limiting of current and voltage of an electrical consumer (15) involving a safety device (19) comprising the steps:
furnishing the safety device (19) with at least a voltage and current limiting device (7,13, 14) and with at least one protective device (F 1) as a fusible fuse, with a voltage limiter device (D3) referenced to a common line (12), with a current limiter device (R6) connected to the output of the voltage limiter device (D3) as well as with a protective circuit (20), which protective circuit (20) is disposed upstream the voltage and current limiting device (7,13, 14), wherein the protective circuit (20) exhibits a field effect transistor (Q1) as a switching and regulating transistor, wherein the source drain leg (S-D) of the field effect transistor (Q1) is disposed between an input connector (8) and the voltage and current limiting device (7,13, 14);
connecting the gate (G) to the common line (12) through a resistor (R4);
connecting a second transistor (Q2) to the input connector (8) and to the gate (G) of the switching and regulating transistor (Q 1), wherein the collector (Q23) is connected to the gate (G) of the switching and regulating transistor (Q 1) for influencing the control voltage of the switching and regulating transistor (Q 1), and
disposing a voltage sensor circuit (D1,RS) between the base (Q22) of the second transistor (Q2) and the common line (12) for voltage detection;
connecting the electrical consumer downstream to the safety device (19) with at least one input connector (8) and one output connector (16) as well as input connector and output connector (10, 17) of the common line (12);

feeding in the control voltage of the field effect transistor (Q 1) from the gate (G) to the common line (12) through the resistor (R4);

feeding a voltage (U9,11) back to the base (Q22) of the second transistor (Q2) over a feedback resistor (R3) from the output (9,11) of the protective circuit (20).
